

Appl. No. 10/508,745; Docket No. NL02 0251US
Amdt. dated March 21, 2006
Reply to Office Action of February 21, 2006

Amendments to the Claims

1. (*Currently Amended*) A semiconductor device comprising a substrate with a first and an opposed second side, at which first side a plurality of transistors and interconnects is present, which are covered by a protective security covering, which device is further provided with bond pad regions, characterized in that the protective security covering comprises a substantially non-transparent and substantially chemically inert security coating, the security coating including at least one layer of inorganic material, and the bond pad regions are accessible from the second side of the substrate.
2. (*Previously Presented*) A semiconductor device as claimed in Claim 1, characterized in that
the bond pad regions are present on the first side of the substrate, and
the substrate is a silicon substrate, that is patterned as required for access to the bond pad regions.
3. (*Previously Presented*) A semiconductor device as claimed in Claim 1, characterized in that a security layer is present at the second side of the substrate, which security layer leaves exposed the bond pad regions or any metallisation for access thereto.
4. (*Previously Presented*) A semiconductor device as claimed in Claim 1, characterized in that the bond pad regions are protected against probing with antiprobe means.
5. (*Currently Amended*) A semiconductor device as claimed in Claim 1, characterized in that ~~the security coating~~ the at least one layer of inorganic material includes ~~comprises a layer of TiO₂.~~
6. (*Original*) A semiconductor device as claimed in Claim 1, characterized in that the security coating is formed of multiple alternate layers, which alternate layers are sensitive to different etchants.
7. (*Original*) A carrier comprising a semiconductor device according to Claim 1.

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Claims 8-10 (*Cancelled*)

11. (*New*) The semiconductor device as recited in Claim 1, wherein the at least one layer of inorganic material includes materials selected from the following: tungsten (W), aluminum (Al), titanium dioxide (TiO₂), titanium nitride (TiN), aluminum-metaphosphate.
12. (*New*) The semiconductor device as recited in Claim 11, wherein the at least one layer of inorganic material further includes: aluminum-metaphosphate derived from precursor materials consisting of Al(H₂PO₃) or mono-aluminum-phosphate.
13. (*New*) The semiconductor device as recited in claim 6, wherein the alternate layers include an organic layer and an inorganic layer.
14. (*New*) The semiconductor device as recited in claim 11, wherein the alternate layers include an organic layer and an inorganic layer.
15. (*New*) The semiconductor device as recited in claim 14, wherein the organic layer includes embedded particles of inorganic material.
16. (*New*) The semiconductor device as recited in claim 15, wherein the embedded particles includes material selected from at least one of the following: tungsten (W), aluminum (Al), titanium dioxide (TiO₂), titanium nitride (TiN), aluminum-metaphosphate, aluminum-metaphosphate derived from precursor materials consisting of Al(H₂PO₃) or mono-aluminum-phosphate.
17. (*New*) The semiconductor device as recited in claim 1, wherein the security coating comprises,
a TiO₂ layer,

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a coating layer based on monoAluminumPhosphate (MAP) filled with particles of either TiN or TiO₂; and

a multi alternating layer structure formed of Al and W layers, respectively.

18. (New) The semiconductor device as recited in claim 6, wherein the security coating comprises,

a TiO₂ layer,

a coating layer based on monoAluminumPhosphate (MAP) filled with particles of either TiN or TiO₂, and

a multi alternating layer structure formed of Al and W layers, respectively.

19. (New) The semiconductor device as recited in claim 1, wherein the security coating is either patterned or unpatterned.

20. (New) The semiconductor device as recited in claim 19, wherein the security coating is patterned to provide capacitive coupling from the semiconductor device to an antenna structure in a carrier.